

# Sonoran Desert Pollinator Plant Guide

*How to attract pollinators  
to your yard!*



City of Phoenix

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# Legend

Size	Bloom Season	Thorns	Leaf Habit	Sun Exposure	Water Use
Mature Size (ft) ↑ WxH ↓	Blooms in Spring 	No Thorns/Spines 	Evergreen 	Full Sun 	Very Low 
	Blooms in Summer 	Thorns/Spines 	Semi-Evergreen* 	Morning Shade 	Low 
	Blooms in Fall 		Deciduous 	Partial Shade 	Moderate 
	Blooms in Winter 			Afternoon Shade 	

\*Some leaves drop for a short time in the Winter.

Butterflies	Bees	Bats	Moths	Birds	Caterpillars	Other Pollinators
						

-  An Icon is used when a plant is pollinated or if the plant provides an important resource for the pollinators' life cycle.
-  All plants in this guide are either perennial or evergreen, unless identified as an annual.

# Introduction



*Did you know* that the monarch butterfly population is struggling? The western population of this butterfly has declined by more than 90% since the late 1990s due to stressors such as urban development, pesticide use, and climate change. Monarch butterflies can migrate up to 3,000 miles, and Arizona is an important part of the monarch's migratory path in the western United States. In 2021, the City of Phoenix joined a nationwide movement to support the monarch butterfly population through the [National Wildlife Federation's Mayor's Monarch Pledge](#). So how can you help? Native nectar-producing plants, especially milkweed, are crucial to the survival of not just the monarch butterfly, but many other important pollinators as well. Pollinators need plants that help support their entire life cycle by providing shelter, food, and energy. The plants included in this guide provide a variety of these critical elements for our pollinator friends. Add some of these plants and see which pollinator species you start to see in your yard.



## *Why does this matter?*

Pollinators play a crucial role in maintaining a thriving ecosystem. A healthy ecosystem enhances our water quality and food production, beautifies our surroundings, and helps regulate local temperatures.

## *How can you help?*

Plant native milkweed and other native plants! This plant guide shows a few of these plants that you can use to beautify your yard and provide important resources for a variety of pollinators throughout their life cycles, including monarch butterflies.



**Learn more** about what you can do to help the monarch butterfly by scanning the QR code or by going to [www.phoenix.gov/oep/monarch](http://www.phoenix.gov/oep/monarch)

# What Do All Pollinators Need?

## *Shelter, Food, and Energy*

### *Bees*

A close-up photograph of a bee hovering over a cluster of small white flowers. The bee's wings are slightly blurred, suggesting movement. The background is a soft-focus green and white.

Bees require secure shelter such as hollow stems, dead wood, ground cavities, or undisturbed soil nests—depending on species—to rear young and protect colonies. For food and energy, they gather nectar (a sugar-rich fuel) and collect pollen, which provides protein and nutrients, especially for larvae.

### *Butterflies*

A monarch butterfly with its characteristic orange and black wings is perched on a yellow flower. The butterfly's wings are spread, and it appears to be feeding on the nectar. The background is a soft-focus green.

Butterflies shelter in tall grasses, shrubs, tree bark crevices, and protected corners of vegetation—these serve as windbreaks, roost sites (safe places to rest), and overwintering habitats. They obtain energy by sipping nectar from a variety of brightly colored, clustered, nectar-rich flowers (e.g. desert marigolds, superstition mallows, **milkweeds**) and may also feed on rotting fruit or damp soil (“puddling”) for nutrients. Many species require specific host plants (like **milkweed for monarchs**) where females lay eggs and caterpillars feed exclusively during the larval stage.

### *Birds*

A hummingbird is shown in flight, hovering near a red flower. Its wings are blurred, and its long beak is pointed towards the flower. The background is a soft-focus green and red.

Hummingbirds—among the few bird pollinators—nest in shrubs and trees using materials like moss, lichen, plant debris, feathers, and spider webs; they prefer sheltered perching and nesting sites with somewhat dense vegetation. Their extremely high metabolism demands frequent access to nectar from tubular, brightly-colored flowers, plus insects and spiders for essential protein during breeding and migration. Offering shade, clean water (like misters or birdbaths), and safe habitat free from predators enhances their comfort and success. Hummingbirds are the most prolific but not the only bird pollinators in the Sonoran Desert. White wing doves, for example, help pollinate saguaro flowers.

### *Bats*

A bat is hanging upside down from a branch, its wings partially spread. It is positioned near a cluster of small white flowers. The background is a soft-focus green.

Nectar feeding bats roost in dark, sheltered spaces such as caves, tree hollows, old buildings, or dense foliage—often moving frequently between roosts depending on food availability. To fuel their nightly flights and high energy requirements, they visit hundreds of small flowers (e.g. agaves, saguaros, and organ pipe cactus) to sip nectar rich in sugars and amino acids. As they feed, pollen adheres to their fur or faces, enabling cross pollination; many desert plants rely heavily on these bat visitors.

# Milkweeds

Note: Tropical milkweed is not native. While it may be locally available, the use of native milkweed species is highly recommended to maximize the ecological benefits of planting milkweed.







## Arizona milkweed

*Asclepias angustifolia*

Size

↑  
**2.5x2.5**  
 ↓

Bloom Season



Thorns



Leaf Habit



Sun



Water Use



Image Courtesy of the Desert Botanical Garden and Kim Pegram







## Desert (rush) milkweed

*Asclepias subulata*

Size

↑  
**4x4**  
 ↓

Bloom Season



Thorns



Leaf Habit



Sun



Water Use



Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert







## Pineneedle milkweed

*Asclepias linaria*

Size

↑  
**3x3**  
 ↓

Bloom Season



Thorns



Leaf Habit



Sun



Water Use



Image Courtesy of the Desert Botanical Garden and Kim Pegram

# Cacti and Succulents



## Banana yucca

*Yucca baccata*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 3x5 ↓					

Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert



## Blue yucca

*Yucca rigida*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 10x6 ↓					

Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert



## Desert spoon

*Dasylirion wheeleri*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 4x4 ↓					

Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert

# Cacti and Succulents



**Engelmann's hedgehog**  
*Echinocereus engelmannii*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
2x2	Spring	Yes	None	Full	Low

Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert



**Engelmann's prickly pear**  
*Opuntia engelmannii*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
4x6	Spring	Yes	None	Full	Low

Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert



**Mescal ceniza**  
*Agave colorata*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
3x3	Spring	Yes	None	Full	Low

Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert

# Cacti and Succulents



**Ocotillo**  
*Fouquieria splendens*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 12x10 ↓					

Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert



**Lady slipper**  
*Euphorbia lomelii*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 3x3 ↓					

Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert



**Soaptree yucca**  
*Yucca elata*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 12x6 ↓					

Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert

# Grasses



## Deer grass *Muhlenbergia rigens*



Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert



## Purple three-awn *Aristida purpurea*



Image Courtesy of Flickr and Matt Lavin



## Side-oats grama *Bouteloua curtipendula*



Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert

# Wildflowers/Small Shrubs



**Arizona poppy\***  
*Kallstroemia grandiflora*  
 (Annual)

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 1x3 ↓					

Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert

\*Available primarily by seed



**Blackfoot daisy**  
*Melampodium leucanthum*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 1x2 ↓					

Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert



**California poppy\***  
*Eschscholzia californica*  
 subsp. *mexicana* (Annual)

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 1x1 ↓					

Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert

\*Available primarily by seed

An annual plant will grow for one growing season.

# Wildflowers/Small Shrubs



## Chocolate flower

*Berlandiera lyrata*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 1x2 ↓					

Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert



## Chuparosa

*Justicia californica*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 4x4 ↓					

Large Image Courtesy of the Desert Botanical Garden, Small Image Courtesy of Adobe Stock



## Common sunflower\*

*Helianthus annuus*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 5x2 ↓					

Large Image Courtesy of the Arizona Municipal Water Users Association and Kirti Mathura, Small Image Courtesy of Adobe Stock

\* Available primarily by seed

# Wildflowers/Small Shrubs



## Desert lavender

*Hyptis emoryi*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 10x8 ↓					

Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert



## Desert marigold

*Baileya multiradiata*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 1x1 ↓					

Large Image Courtesy of the Arizona Municipal Water Users Association and Carol Ward, Small Image Courtesy of Adobe Stock and Images by Downing



## Globemallow

*Sphaeralcea ambigua*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 3x3 ↓					

Large Image Courtesy of the Arizona Municipal Water Users Association and Carol Ward, Small Image Courtesy of Adobe Stock and Krzysztof Wiktor

# Wildflowers/Small Shrubs



## Goodding's verbena

*Glandularia gooddingii*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 1x3 ↓					

Image Courtesy of the Arizona Municipal Water Users Association and Carol Ward



## Passion vine

*Passiflora arizonica, bryonioides, or Mexicana*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 10x10 ↓					

Image Courtesy of Adobe Stock and Ingeborg Zeh



## Parry's beardtongue

*Penstemon parryi*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 1.5x1.5 ↓					

Large Image Courtesy of Adobe Stock and Teresa L. Jackson, Small Image Courtesy of the Arizona Municipal Water Users Association and Carol Ward

# Wildflowers/Small Shrubs



## Firecracker penstemon

*Penstemon eatonii*



Large Image Courtesy of Adobe Stock and Focused Adventures, Small Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert



## Pink fairy duster

*Calliandra eriophylla*



Large Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert, Small Image Courtesy of Adobe Stock and C. Weiss



## Triangle-leaf bursage

*Ambrosia deltoidea*



Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert

# Wildflowers/Small Shrubs



## Turpentine bush

*Ericameria laricifolia*



Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert



## Wright's beebrush

*Aloysia wrightii*



Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert



## Gregg's mistflower

*Conoclinium greggii*



Large Image Courtesy of Adobe stock, Small Image Courtesy of Adobe Stock and Rolf Nussbaumer/Danita Delimont

# Wildflowers/Small Shrubs



## Arizona lupine

*Lupinus arizonicus*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 3x3 ↓					

Image Courtesy of the Arizona Municipal Water Users Association and Carol Ward



## Trailing indigo bush

*Dahlia pulchra*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 3x4 ↓					

Image Courtesy of Pexels and Katana



## Desert penstemon

*Penstemon pseudospectabilis*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 3x4 ↓					

Image Courtesy of Flickr and Cultivar413

# Wildflowers/Small Shrubs




**Desert lupine**  
*Lupinus sparsiflorus*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 1x1.5 ↓					

Image Courtesy of Adobe Stock and Marie Kazalia




**Whitestem paperflower**  
*Psilostrophe cooperi*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 3x2 ↓					

Large Image Courtesy of Flickr, Small Image Courtesy of Flickr




**Desert zinnia**  
*Zinnia acerosa*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 2x1 ↓					

Large Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert, Small Image Courtesy of Flickr

# Trees/Large Shrubs



**Jojoba**  
*Simmondsia chinensis*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 7x8 ↓					

Large Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert,  
Small Image Courtesy of the Arizona Municipal Water Users Association



**Feather bush**  
*Lysiloma watsonii*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 20x15 ↓					

Large Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert,  
Small Image Courtesy of the Arizona Municipal Water Users Association



**Desert wolfberry**  
*Lycium andersonii*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 10x10 ↓					

Large Image Courtesy of the Arizona Municipal Water Users Association and Victoria Caster,  
Small Image Courtesy of the Arizona Municipal Water Users Association

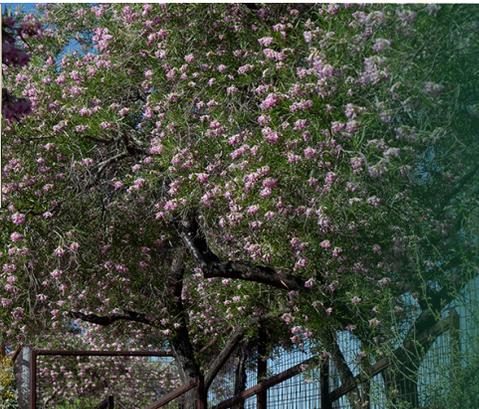
# Trees/Large Shrubs



**Brittlebush**  
*Encelia farinosa*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ <b>3X4</b> ↓					

Large Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert, Small Image Courtesy of Adobe Stock and Jared Quentin



**Desert willow**  
*Chilopsis linearis*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ <b>25x20</b> ↓					

Large Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert, Small Image Courtesy of Adobe Stock and Hulshofpictures



**Desert ironwood**  
*Olneya tesota*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ <b>25X25</b> ↓					

Image Courtesy of the Desert Botanical Garden

# Trees/Large Shrubs



**Velvet mesquite**  
*Neltuma {Prosopis} velutina*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 25x25 ↓					

Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert



**Foothill palo verde**  
*Parkinsonia microphylla*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 15x15 ↓					

Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert



**Superstition mallow**  
*Abutilon palmeri*

Size	Bloom Season	Thorns	Leaf Habit	Sun	Water Use
↑ 4x4 ↓					

Large Image Courtesy of the Arizona Municipal Water Users Association and Dave Seibert, Small Image Courtesy of Adobe Stock and SailingAway

# Planting Information

## Installation

For the best results when installing native plants in your yard or patio, follow these guidelines:



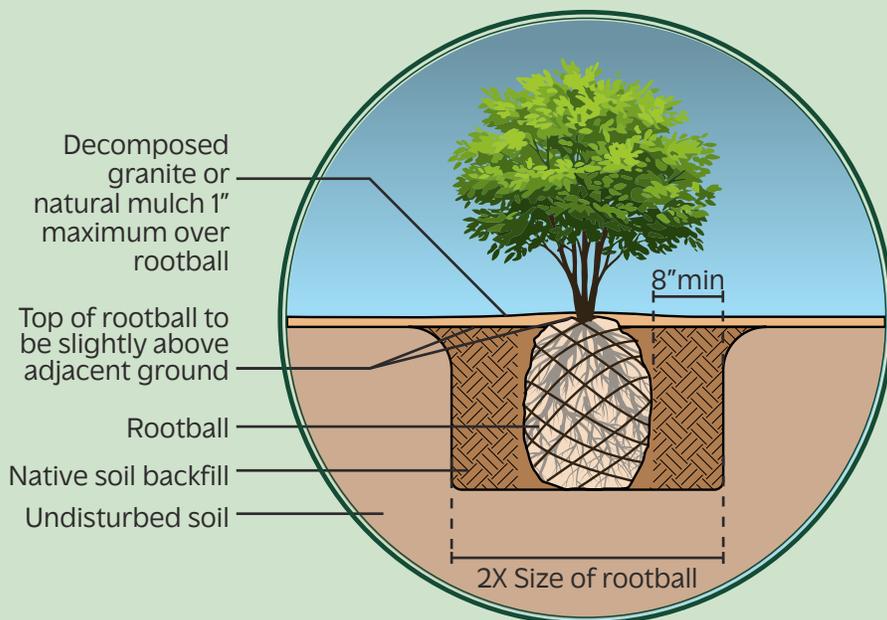
Begin by choosing a location with well-draining or sandy soil that matches the specific sun requirements of the plants. Avoid areas with moisture-retentive soils (e.g. clay), as these can lead to root rot. When planting, backfill using native soil only, no fertilizer is needed. To regulate soil temperature and improve drainage, apply a thin layer of decomposed granite or other natural mulch around the planting area.



Make sure the planting hole is as deep as the root ball and twice as wide. Set the plants so that the top of the root ball is level or slightly higher than the surrounding soil to promote good drainage.



Remember, the best time to plant is during the cooler months, typically from late September through November. This time frame avoids the intense heat of Summer and allows the plant to focus energy on root growth. Planting can also be done in early Spring if the plants are given enough time to establish root growth before the late Spring and Summer heat. Depending on last frost date and weather conditions, Spring planting ranges from February through early May.



**Note: Tree staking** should only be done if **absolutely necessary**, as many of our trees establish better without it. Do not stake if the tree can stand on its own after the nursery stake is removed, or if it is a multi-trunked or low-branching tree that can typically stand without support. If a tree is unstable or is exposed to high-winds, temporary support can be beneficial for a limited time but ideally no longer than one growing season.

## Maintenance



Maintaining native plants requires a blend of common-sense care and practices specific to each type of plant, but in most cases, minimal maintenance is required. Throughout the year, periodically monitor for proper watering, replenish mulch as needed, and regularly remove dead parts of the plant, spent flower stalks, or broken branches - just enough to maintain a healthy, natural appearance. Avoid heavy shearing. Watch for any weed infestation and hand-pull as necessary.



Generally, the best time for pruning is late Fall to early Spring. For flowering plants, prune after the bloom cycle. This will encourage re-blooming. Remove dried outer Agave leaves as they accumulate and lightly trim leggy or damaged growth of your succulents to encourage a fuller, more structured form.

**Note:** Avoid pruning milkweeds during the Spring as this is peak monarch reproduction season! (*check the plant for caterpillars before pruning*)



## Pesticides/Fertilizers

Avoid using chemical pesticides and fertilizers whenever possible as many pollinators and native plants are sensitive to residues and can be easily harmed. Even organic or natural products that kill other pests may be harmful to pollinators, so the recommendation is to avoid their use as much as possible. Instead focus on non-chemical maintenance practices, like hand-pulling weeds. If chemical approaches are necessary, use organic materials and keep treatment minimal and targeted to the problem area. Investigate what might address the issue you're having with the least potential impact to pollinators.

Oleander aphids can commonly be found on milkweed plants during summer and early fall. These do not need to be treated for removal as research indicates they are not harmful to the plant or to butterfly eggs/caterpillars.



# Planting Information

## Watering Guidance

Fortunately, our native plants are well adapted to the local climate and native soils, meaning they require minimal supplemental irrigation once established. While plant establishment timelines vary between one year to three years as well as between plant types, below are a few watering tips to follow to help your newly planted plants thrive and establish well.

- If utilizing an automatic, underground irrigation system, as much as you can, **group plants with similar watering needs/schedule** on dedicated irrigation valves.
- Water deeply and less frequently to encourage deep root growth at the base of the plant. **Low, slow, and infrequent is the way to go!**
- For additional water control, you can always **change the flow rate of drip emitters**.
- **Allow soil to dry completely** between waterings and adjust watering schedule based on season (plants will need even less water in the cooler months) and establishment period.
- Water **early in the morning** to minimize water loss due to evaporation.
- **Keep your mulch refreshed** around the base of the plant to help retain soil moisture.
- In the heat of the summer, keep in mind some plants have drought adaptations that may make the plant look “stressed”. Make sure you familiarize yourself with your plant characteristics, they are trying to get through the summer like the rest of us!



## Getting Your Native Plants Established

According to Water – [Use It Wisely's Landscape Watering by the Numbers](#) publication, the below watering schedule table offers guidelines to help initial plant establishment.



### Watering Schedule for Newly Planted Native Plants\*

Weeks 1 & 2	Water every 1-2 days in Summer, every 3-4 days Fall through Spring
Weeks 3 & 4	Water every 3-4 days in Summer, every 6-7 days Fall through Spring
Weeks 5 & 6	Water every 4-6 days in Summer, every 7-10 days Fall through Spring
Weeks 7 & 8	Water every 7 days in Summer, every 10-14 days Fall through Spring
After week 8	Gradually extend the time between irrigations until plants are established

*Note: After the eighth week, move the drip emitters to the outer edge of the root ball.*

**Note:** Newly planted cacti require deep watering like other plants but wait to water again for at least a week to allow roots to dry and heal.

## Long-Term Care



Once your native plants are well established (typically after 1 - 3 years), they may no longer need regular irrigation and can thrive on periodic supplemental watering at varying rates throughout the year.



Water your milkweeds, grasses, wildflowers, and small shrubs deeply once a month. During prolonged Summer heat, you may need to increase the watering to once a week or more. Are we having good Summer rain? Adjust your watering schedule to take advantage of the rainfall and soil moisture and to avoid overwatering.



Water your trees deeply once a week in the Fall and Spring. Increase watering to 2 or 3 times a week during Summer heat and reduce to every 2 - 4 weeks during Winter.



Established cacti and succulents need the least amount of supplemental watering (if any) of all the plants in this guide, but even they can get a little thirsty. Water deeply every 10 - 14 days in the Summer and every 4 - 6 weeks (or less) in Winter.

Remember - **low & slow deep watering for that important root growth!**



Interested in stormwater harvesting to help support your native plant watering needs? Check out the free Green Stormwater Infrastructure Handbook for Residents! [www.phoenix.gov/pdd/gsi](http://www.phoenix.gov/pdd/gsi)



Scan here!



For additional guidance and information on landscape watering, refer to **Landscape Watering by the Numbers** published by **Water – Use It Wisely**

<https://wateruseitwisely.com/saving-water-outdoors/interactive-watering-guides/>

# References and Acknowledgments

Visit [www.swmonarchs.org/nurseries.php](http://www.swmonarchs.org/nurseries.php) to see a list of local nurseries selling Milkweeds!

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## Special thanks to the following for their review and input:



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*This handbook was designed and created by  
Kimley-Horn for the City of Phoenix*





**City of Phoenix**



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